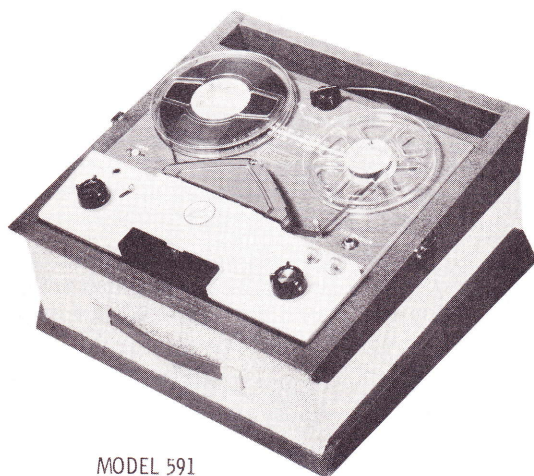
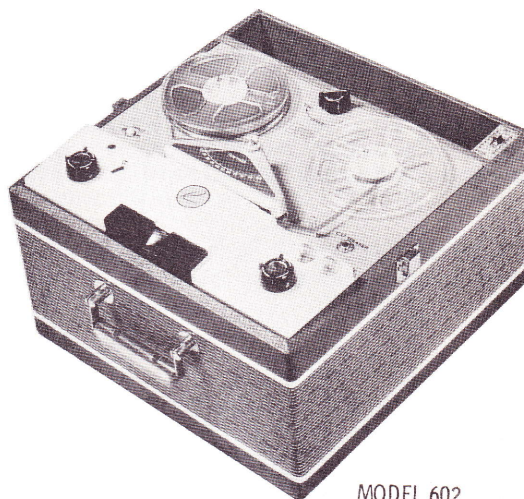


RECORDIO MODELS
591, 602

MODEL 591



MODEL 602

GENERAL INFORMATION

Models 591 and 602 Recordio tape recorders feature push button operation, dual track, dual speed recording and playback. Dual track recording gives two full-length recordings on one reel of tape. Any size reel up to seven inches can be used. On Model 602, a tape timer enables the operator to locate immediately any selection on a recorded tape. Two neon record-level indicators simplify the recording level setting.

New recordings can be made on a previously recorded tape because the erase head is automatically positioned when the Record button is depressed, or the same recording may be played back indefinitely. Recordings can be made from an external radio, television receiver, or phonograph, in addition to those made directly from the microphone. Recordings can be played back through the self-contained speaker or an external speaker or speakers by using the output jack.

Models 591 and 602 have two tape speeds, 7 1/2 and 3 3/4 inches per second. When both tracks of the tape are used, the recording times are as follows:

Reel Size	3 3/4 Ips	7 1/2 Ips
5" (600 ft.)	1 Hour	1/2 Hour
7" (1200 ft.)	2 Hours	1 Hour

These Recordios operate on 60 cycles, 117 volts AC only. Before connecting to a line supply, be absolutely certain it agrees with the foregoing specifications. The unit will be severely damaged if connected to a direct current (DC) line.

Manufactured by:

Recordio Corporation
Charlotte, Michigan

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana



The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of CQ415

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SET491

FOLDER 13

RECORDIO MODELS
591, 602SET 491
FOLDER 13

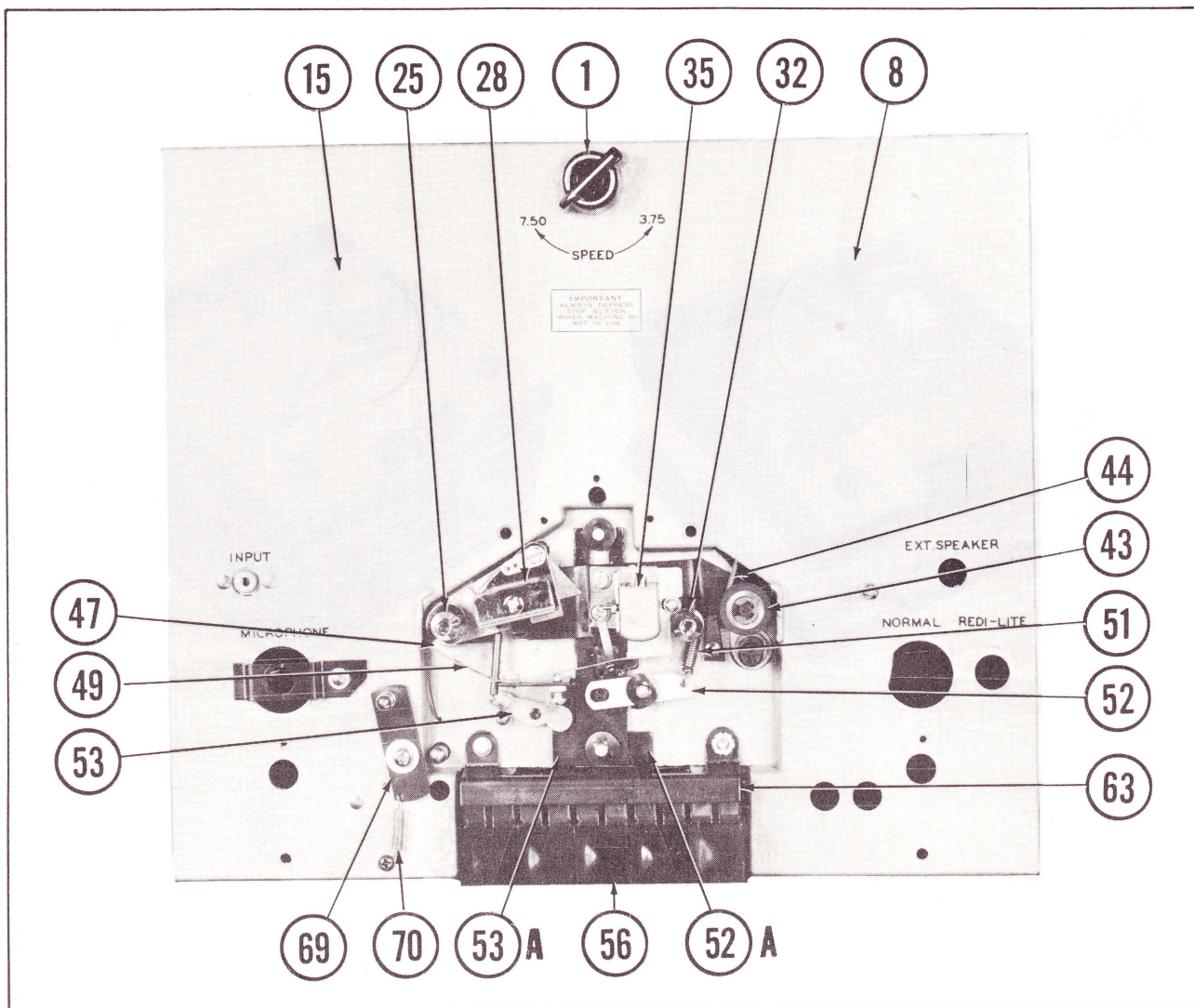


FIG.1 TOP VIEW OF MECHANISM WITH ESCUTCHEON REMOVED

OPERATING INSTRUCTIONS

Preparing For Operation

1. Remove the AC cord, reel of tape, empty reel, and the microphone from the case storage compartment.
2. Depress the Stop button.
3. Insert the AC cord into a convenient wall receptacle of the proper rating.
4. Set the Speed Change knob to 3.75 or 7.50, as desired.

CAUTION: Do not turn Speed Change knob unless Stop button is depressed.

When the Forward or Rewind buttons are depressed, the Record and Play buttons are locked so that they cannot be pressed down, with the possibility of spilling the tape. The buttons should always be pressed down firmly until they latch. Always depress the Stop button before changing functions or speeds.

IMPORTANT: Always depress the Stop button when the recorder is not in use.

Threading The Tape

1. Place a reel of tape on the left reel pan (15), making certain the reel slots engage the protrusions on the pan. Place an empty reel on the right reel pan (8), again making certain the reel slots engage the protrusions on the pan.
2. Unwind about 14 inches of tape from the supply reel. Hold a section taut and insert it into the tape slot, making certain the dull-coated side faces the heads (rear of unit).
3. Insert the free end of the tape into one of the three slots in the hub of the take-up reel. While holding the end in place, turn the reel two or three turns to secure the tape to the reel.

To Record From a Microphone

1. Turn the On-Off-Volume control to the right and allow about 30 seconds for the tubes to warm up.
2. Move the Record Lock lever downward with the left hand. This releases the Record Safety lock, which prevents accidental erasure.
3. Depress the Record button with the right hand (while holding the Record Lock lever with the left hand) until it latches.
4. Adjust the Volume control until the normal level indicator just flashes while speaking into the microphone. The overload indicator may flash occasionally on peak passages. It should not flash continually, which indicates distortion.
5. The Tone control is automatically disconnected when the unit is recording. When recording from a radio, set the radio tone control for maximum treble.

NOTE: To monitor the recording, place the Monitor switch in the On position.

To Record From an External Radio, TV Receiver or Phonograph

1. Insert the phonograph plug into the input jack.
2. For radio or TV recording, connect the patch cord (Part No. C20, 233) to the voice-coil terminals of the radio or TV receiver speaker by means of alligator clips. Plug into the input jack.
3. Proceed with recording as described under "To Record From Microphone".

NOTE: Remove patch cord after recording.

To Use Second Track

1. Depress the Stop button after all tape has been wound onto the take-up reel.
2. Remove reel containing tape, and place on left (supply) reel.
3. Place empty reel on right (take-up) pan.
4. Thread the tape and proceed with the recording as previously described.

To Erase Tape

When the Record button is depressed, the erase head is automatically positioned, erasing any previous recording while a new one is being made. Material no longer needed can be erased, without recording, by depressing the Record button and turning the Volume Control knob to its minimum position. One track is erased at a time. To erase the second track, reverse the reels and repeat the foregoing operation.

To Play Recordings

1. Thread tape as described under "Threading The Tape".
2. Set the Speed Change knob to the speed at which

the recording was made.

3. Depress the Play button until it latches.
4. Adjust the Volume and Tone controls to the desired listening level.

NOTE: The Speaker Monitor switch must be in the On position.

High-Speed Forward or Rewind

To play a certain portion of the tape over again, it is not necessary to rewind the entire reel. Depressing the Forward or Rewind buttons will rapidly advance or rewind the tape.

Several minutes of normal recording can be skipped in a few seconds by using the Forward and Rewind buttons.

Tape Timer

If you wish to play back a certain portion of a recording while making a recording or playing back a tape on the Model 601, note the reading on the Timer Scale at the time the particular reading is being made or heard. Rewind the tape until the same number appears on the scale. Depress the Stop button, and then the Play button.

When starting a new reel or rerecording a reel, reset the indicator pointer to "O" by rotating the Reset knob. By starting at "O" on all tapes, you can catalog the number location for each selection on any reel.

To Use Extension Speaker or Speakers

For better tone quality and power than the internal speakers can provide, it is suggested that large external speakers be plugged into the External Speaker jacks.

The Recordio Model DS-599 dual-extension speaker set enables you to use two speakers, giving more power and sound. Each speaker has a speaker jack, so that one speaker can be plugged into the other. Thus, both speakers are in operation for better sound on straight playback or when the recorder is used for public address systems. However, the recorder is suitable for use with any extension speakers of the permanent-magnet type, provided they are matched and have a 3 - 8-ohm voice coil.

To Use As a Public Address System

To use the recorder as a public address system, plug an extension speaker or speakers into the external phone input jack and depress the record button. Adjust the tone and volume controls to desired level. A recording can be made at the same time by threading a reel of tape onto the recordio.

CAUTION: When using the recorder as a public address system, make sure the microphone is as far away as possible from the speaker or speakers to prevent feed-back squeal.

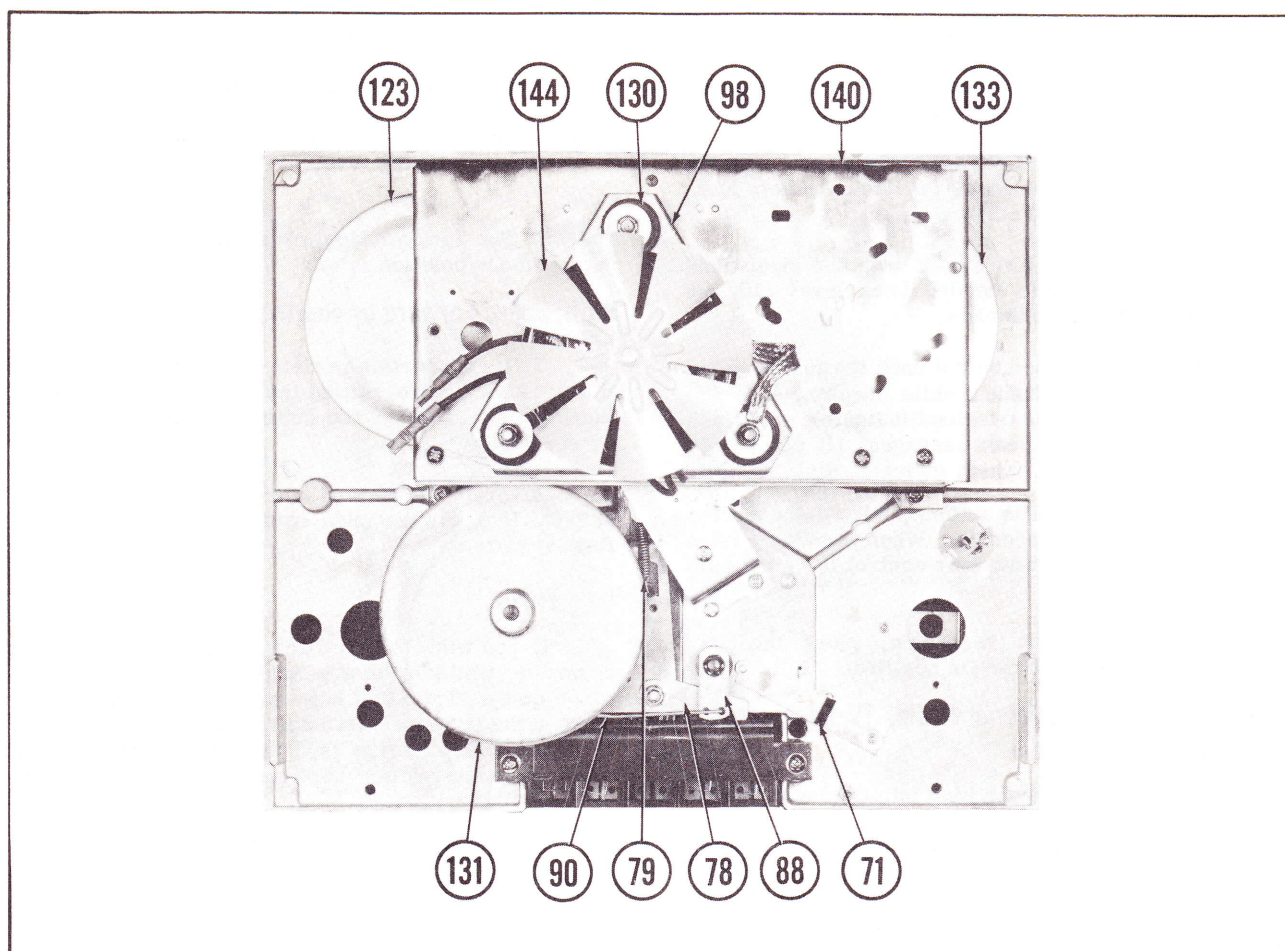


FIG. 2 BOTTOM VIEW OF MECHANISM

DISASSEMBLY INSTRUCTIONS

To Remove Unit From Case

1. Remove Volume and Tone control knobs.
2. Remove two Phillips head screws from front escutcheon.
3. Remove two hex-head screws from front base plate.
4. Remove two Phillips head screws from the rear compartment.
5. Remove Phillips head screw holding AC cord to cabinet.
6. Lift unit out of case, removing speaker leads from speaker before removing unit completely.
7. To reassemble, reverse the foregoing procedure.

ure.

To Remove Amplifier from Transport Mechanism

1. Disconnect the motor and power-transformer leads from the amplifier chassis.
2. Remove the head leads.
3. Remove two slotted-head machine screws from each end of the amplifier chassis.
4. Carefully lift the amplifier away from the transport mechanism, and disconnect the play-record switch actuating link.
5. To reassemble, reverse the foregoing procedure.

ADJUSTMENTS

Pressure Pad Adjustment (Refer to Exploded View)

1. Remove front escutcheon (14).

2. Depress the Play button. Do not turn the recorder on.

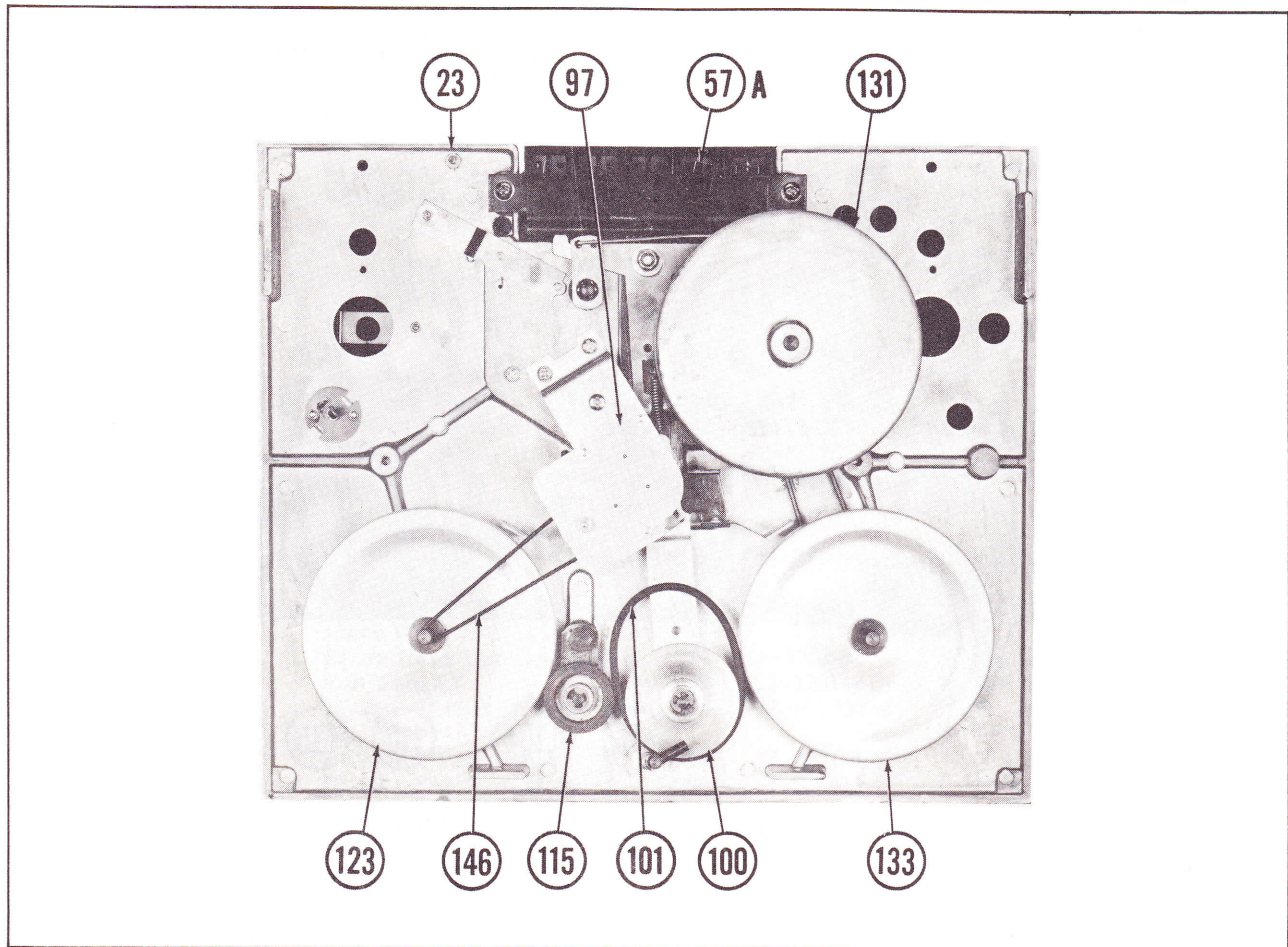


FIG.3 BOTTOM VIEW OF MECHANISM WITH DRIVE PLATE REMOVED

3. Using a pencil-type postal scale, check the pressure needed to just pull the right pad away from the play-record head. The test should be made at the end of the pressure pad mounting spring. If necessary, adjust locked adjustment screw (50) until a reading of $1 \frac{3}{4}$ ounce \pm $\frac{1}{4}$ ounce is obtained.
4. Adjust guide post pressure pad (left pad) by bending pressure pad spring (49). It must be adjusted for minimum pressure against the tape.

NOTE: After making the adjustment, depress the Stop button, and replace the front escutcheon.

Erase Head

1. With tape properly threaded, turn recorder on and depress the Record button. Allow tape to run for a few seconds; then turn recorder off, but leave Record button depressed.
2. With timer escutcheon (7) and front escutcheon (14) removed, check erase head (28) to see that it is parallel with the tape.
3. Make sure the top edge of the tape coincides with the top end of the diagonal slot in the erasure head (junction of long diagonal and short vertical slot). To adjust the level of the tape, loosen set

screw (24), and rotate tape guide post (25) to move the tape up or down.

Brake Shoe

1. With all push buttons in the up position, brake pads (81) should clear brake drums (123) and (133) by approximately $\frac{1}{8}$ inch.
2. Depress the Stop button while observing the brake pads. Both brake pads must contact the brake drums at the same time and with equal pressure.
3. If necessary, adjust the pressure by bending brake spring (80).

Head Alignment

Use standard 6- or 12- alignment tape for this procedure.

Remove front and rear escutcheons. Clean pole pieces of play-record head, using a good commercial head cleaning agent, naphtha or lighter fluid. Proceed as follows:

1. Thread alignment tape on recorder and turn the volume on full. Connect VTVM to external speaker jack. Set meter for AC volts, 3-volt range.

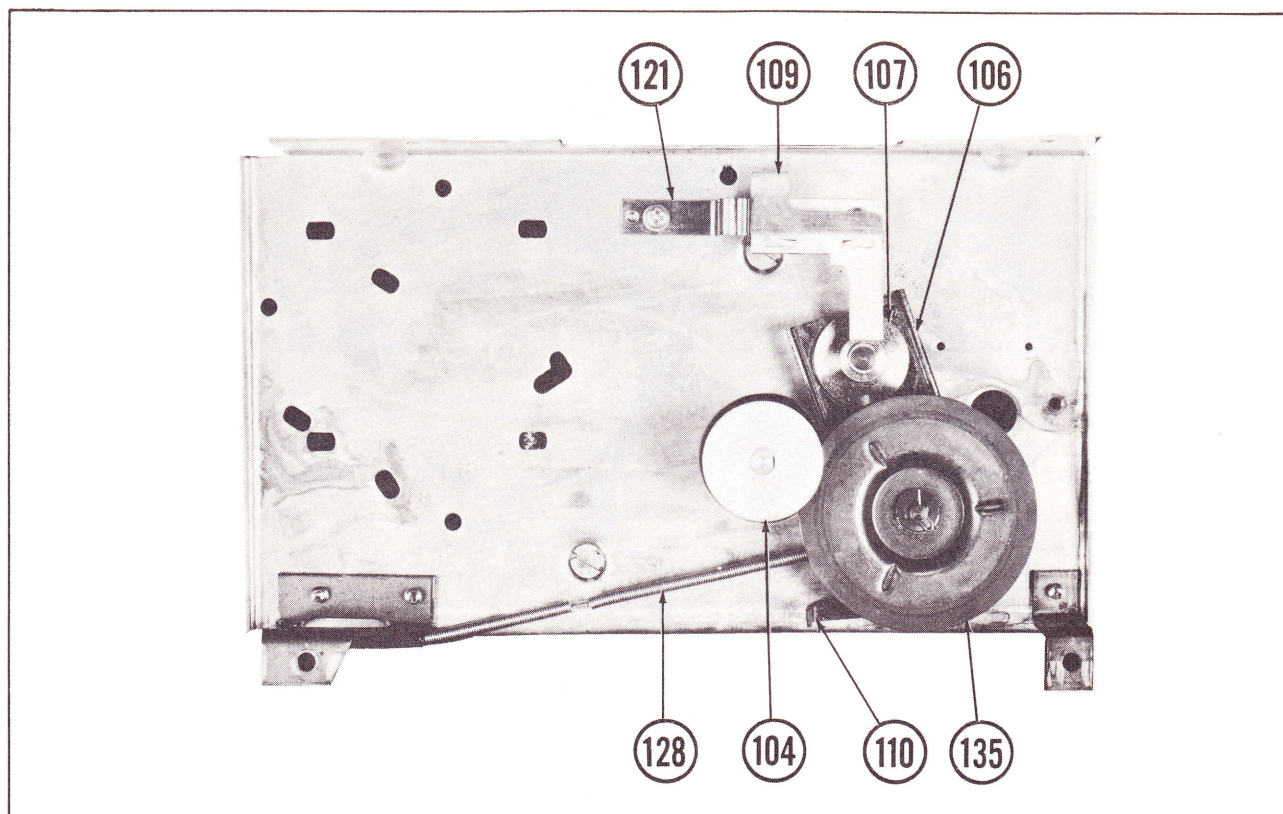


FIG.4 TOP VIEW OF DRIVE PLATE ASSEMBLY

2. Place unit in Play position, 7 1/2 ips. Decrease the volume until output is 1 volt on meter. Rotate play-record head adjustment screw (33) until maximum point of deflection is found.
3. Gently press the pressure pad at a point to the extreme right of the play-record head. The output should not increase. If it does, slightly readjust the pressure pads. (See "Pressure Pad Adjustment").
2. Place unit in Record position and set volume to maximum.
3. Connect a VTVM thru low capacity probe across Record head. Place meter selector on AC volts, 100-volt range.
4. Adjust C18 for a reading of 85 volts. (Oscillator frequency is approximately 60KC.)

Bias Adjustment

1. Set line voltage at 117 volts AC.

CLEANING

Most defects, other than wear or breakage, can be traced to dirty surfaces. Play-Record head (35), the capstan, and pinch roller (43) may accumulate tape coating oxide, which is worn off the tape as it passes these parts. This accumulation should be periodically

removed because it will cause faint recording and poor playback. Wipe these surfaces carefully with a clean cloth. If dirt is caked or hard and will not come off with a dry cloth, dampen the cloth slightly with alcohol.

LUBRICATION

All rotating parts have generous size Oilite bearings, which are factory lubricated. Under normal use, no further lubrication is necessary. In heavy duty service, the following parts should be lubricated once a year with a drop of No. 20 motor oil.

1. The top and bottom motor bearings.
2. The capstan bearing.
3. Pinch roller (43) bearing.

4. All idler and drive wheel bearings.

5. The reel-spindle bearings.

The basic rule is — do not overlubricate. Oil must be kept off all rubber idlers and belts, the fly-wheel rim, and off any parts that might transfer oil

to them. Always wipe excess lubrication from lubricated parts.

Occasionally remove foreign matter from under the plastic push-button cover and place a drop of oil on the sliding lever members.

TROUBLE CHART

Symptom	Cause	Remedy
Motor and amplifier dead.	1. Power supply defective. 2. Damaged power cord. 3. Defective On-Off switch.	1. Check voltages per schematic. 2. Repair or replace power cord. 3. Replace On-Off switch.
Does not record.	1. Faulty microphone or cord. 2. Faulty input jack. 3. Faulty tube. 4. Open play-record head (35).	1. Replace if necessary after checking recorder with another type of input. 2. Check input jack and replace if necessary. 3. Check tubes. 4. Replace play-record head (35).
No erase, or erase is incomplete.	1. Erase head tension spring (46) disconnected or broken. 2. Erase head (28) not adjusted properly.	1. Connect or replace spring (46). 2. See "Erase Head Adjustment" under "ADJUSTMENTS".
Flutter	1. Dirty play-record head (35), pressure pads, capstan shaft, or pinch roller (43).	1. Clean as described under "CLEANING".
Wow.	1. Brake return spring (74) disconnected or broken. 2. Oil or foreign matter on drive surfaces.	1. Connect or replace spring (74). 2. Clean with a cloth and alcohol.
Tape spills when Stop button is depressed during fast forward or rewind.	1. Brake shoe out of adjustment. 2. Brake pads worn out or missing.	1. See "Brake Shoe Adjustment" under "ADJUSTMENTS". 2. Replace brake pads.
No fast forward or rewind.	1. Idler lever tension spring (79) disconnected or broken, thereby not actuating idler lever (85). 2. Idler drive belt (101) broken or not properly connected.	1. Connect or replace spring (79). 2. Replace idler drive belt (101).
Tape fails to wind onto take-up reel during Play or Record.	1. Reel drive spring (44) loose, disconnected, or broken. 2. Reel pan shaft (8) binding.	1. Connect or replace reel drive spring (44). 2. Remove foreign matter from bearing surfaces and shaft with clean cloth. Lubricate with one drop of No. 10 motor oil.
No drive in Play or Record.	1. Idler tension spring (128) disconnected or broken.	1. Connect or replace idler tension spring (128).

RECORDIO MODELS
591, 602

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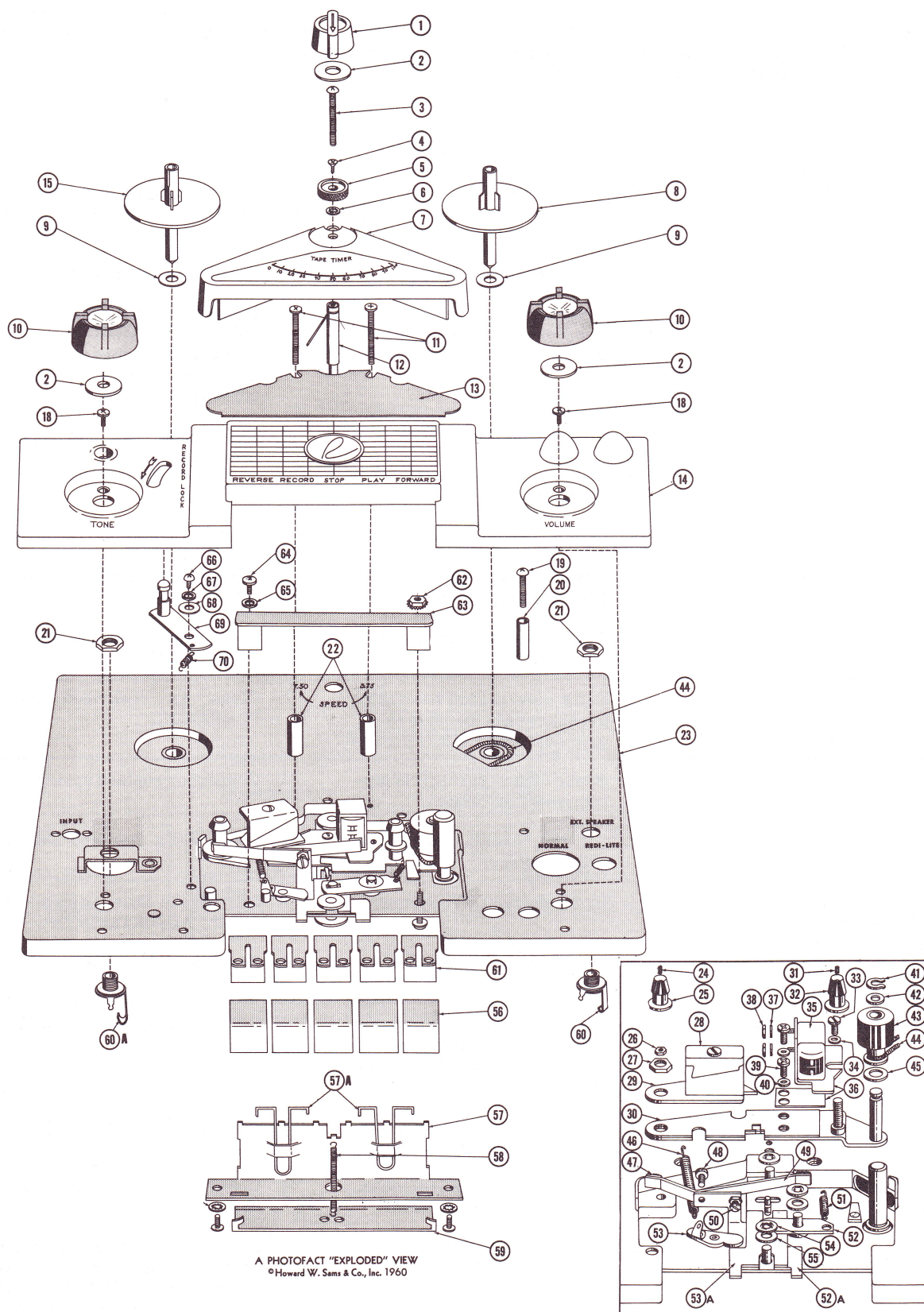
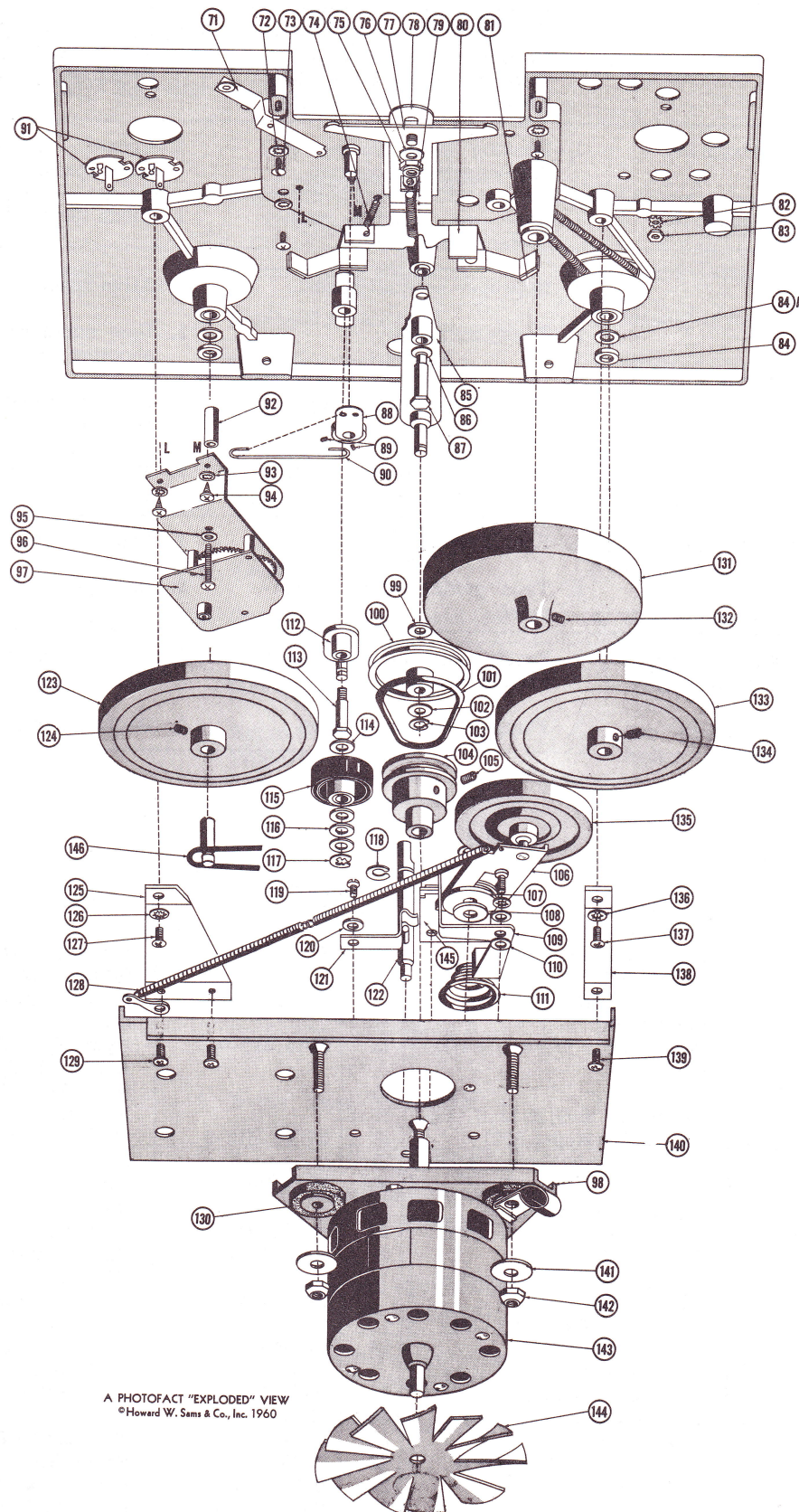


FIG. 5A EXPLODED VIEW OF PARTS ABOVE BASEPLATE



A PHOTOFACT "EXPLODED" VIEW
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FIG.5B EXPLODED VIEW OF PARTS BELOW BASEPLATE

TROUBLE CHART (CON'T.)

Symptom	Cause	Remedy
	2. Idler slide plate (106) binding on idler slide bushing (107), thus preventing idler wheel (135) from moving forward.	2. Check idler slide plate (106) and bushing (107) for burrs. Clean with alcohol.
Push buttons fail to latch into position.	1. Locking plate spring (58) disconnected or broken.	1. Connect or replace locking plate spring (58).
Poor high - frequency response;	1. Head not making proper contact with tape. 2. Improper head alignment. 3. Faulty amplifier.	1. Clean the head. 2. Align head. 3. Use standard audio trouble shooting procedures.
Hum	1. Microphone near equipment producing hum. 2. Microphone leads insufficiently shielded.	1. Move microphone away from equipment. 2. Make sure leads are properly shielded.
Tape scrapes against edge of reel.	1. Reel warped. 2. Tape guides out of adjustment.	1. Replace reel. 2. Realign tape guides.
Distorted recording; low volume due to no recording bias.	1. Faulty bias oscillator tube or oscillator coil. 2. Faulty play-record head.	1. Check oscillator tube and oscillator coil. 2. Replace head.

MECHANICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	C-13.253-7	Speed Shift Knob (Black) (Model 602)	14	E-13.295-8	Front Escutcheon (Silver) (Model 602)
	C-13.253-9	Speed Shift Knob (Gray) (Model 591)		E-13.295-7	Front Escutcheon (White) (Model 591)
2	73-2254-3	Felt Washer 3/4 x 1/4 I.D. x 1/16	15	C-13.318-0	Nylon Reel Pan and Shaft Ass'y. (Left)
3	57-4C-624-5	Screw	16		Not used in These Models
4	57-4C-405-5	#4-40 x 5/16 O.H.M.S. Phil. Stl. N.P. (Model 602)	17		Not used in These Models
5	B-32.302-2	Timer Knob (Chrome) (Model 602)	18	57-4C-610-5	#6-32 x 5/8 Phillips O.H.M.S. Screw
6	73-2334-1	#6 Cantlink Washer	19		Spacer
7	D-13.292-2	Timer Escutcheon (Silver) (Model 602)	20	B-19.1561	Hex Nut
	D-13.280-5	Timer Escutcheon (Brown) (Model 591)	21		Spacer (2)
8	C-13.318-0	Nylon Reel Pan and Shaft Ass'y. (Right)	22	B-33.446	Baseplate (Gray Hammertex) (Model 602)
9	B-28.163	Linen Washer 3/8 x 7/32 x .010 Black Varnished	23	E-13.424-2	Baseplate (brown Hammertex) (Model 591)
10	C-13.254-15	Control Knob, 2 (Black) (Model 602)		E-13.424-1	#6-32 x 3/16 Bristol Head Set Screw
	C-13.254-14	Control Knob, 2 (Brown) (Model 591)	24	57-3439-0	Tape Guide Post (Left)
11	57-1C-618-1	#6-32 x 1/8 Phillips B.H.M.S.	25	B-32.300	#6-32 Hex Nut
12	B-35.851-1	Timer Shaft and Indicator Ass'y.	26	48-410-1	Tape Guide Post Spacer
13	B-19.975-2	Rear Escutcheon Plate	27	B-32.260	Erase Head
			28	C-35.756-1	Erase Head Plate
			29	B-19.1410-1	Pinch Roller and Record Head Ass'y.
			30	B-35.1067-2	#6-32 x 3/16 Bristol Hd. Set Screw
			31	57-3439-0	Tape Guide Post (Right)
			32	B-32.282	

MECHANICAL PARTS LIST (CON'T.)

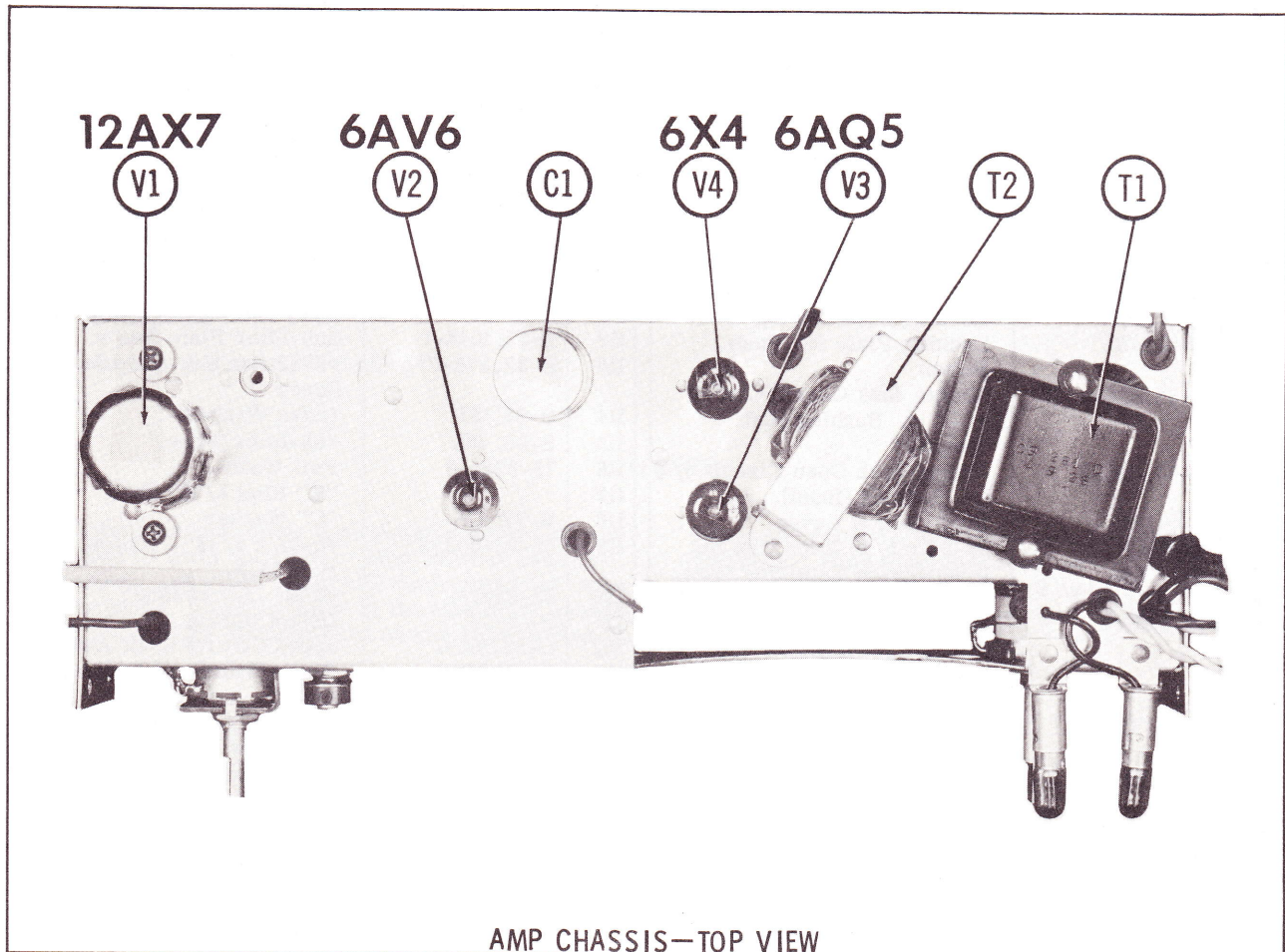
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
33	57-3102-1	#4-36 x 1/4 R. H. M. S. (Azimuth Adj.)	76	73-2241-148F	Flat Washer 1/2 O.D. x .205 I.D. x 1/32 Std. C.P.
34	73-2231-1	#4 Int. Lockwasher Std. C.P.	77	B-35.1046-1	Shift Plate Ass'y.
35	B-36.249	Record-Playback Head M/ M (Alt. for B-36.251 W/ M) Mon.	78	C-35.835-1	Brake Slide Plate Ass'y.
	B-36.25	Record-Playback Head W/ M (Alt. for B-36.248 M/ M) Mon.	79	B-31.339	Idle Lever Tension Spring
36		Record-Playback Head Brkt. Ass'y.	80	B-35.1070-1	Brake Spring Ass'y.
37		Int. Tooth Lockwasher	81	B-31.335	Brake Pad Felt
38		#2-56 x 3/16 Hex Nut	82		Lockwasher
39	57-1C-603-2	#6-32 x 3/16 B.H.M.S. Stat. Brz. (2)	83		Hex Nut
40	73-2231-4	#6 Int. Lockwasher (2)	84	73.2248-39	Flat Washer .425 O.D. x .255 x .070 Phenolic
41		"E" Ring 3/16 Shaft	84A	B-28.163	Linen Washer
42	B-28.163	Linen Washer	85	B-35.1051-1	Idle Lever Ass'y.
43	B-33.404	Pinch Roller	86	B-31.382	Spring Washer
44	B-31.351	Reel Drive Spring Belt	87	B-32.275	#8-32 Hex Hd. Shoulder Screw
45	B-28.163	Linen Washer	88	B-35.859-2	Switch Lever Ass'y.
46	B-31.361	Erase Head Tension Spring	89	57-3439-0	#6-32 x 3/16" Bristol Head Set Screw
47	B-31.335	Felt Pads (2)	90	B-31.333	Switch Arm Link
48	57-1C-603-2	#6-32 x 3/16 B.H.M.S. Sta. Brz.	91		Phono Jack
49	B-35.1047-1	Pressure Pad Ass'y.	92	B-33.118	Spacer for Gear Train
50	57-16C-606-1	#6-32 x 3/8 R.H.M.S. (Pressure Pad Adjust)	93	73-2231-4	#6 Int. Lockwasher
51	B-31.360	Pinch Roller Spring	94	57-1C-603-2	#6-32 x 3/16" B.H.M.S. Phillips
52	B-19.881	Playback Actuating Lever	95	73-2231-4	#6 Int. Lockwasher
52A	B-35.1045-1	Playback Slide Plate Ass'y.	96	57-1C-614-1	#6-32 x 7/8" B.H.M.S. Phillips
53	B-35.882	Record Actuating Lever Ass'y.	97	D-33.445	Gear Train for Tape Index
53A	B-19.868	Record Slide Plate	98	C-19.837	Motor Adaptor Plate
54	B-33.412	Push-on Stud Nut for 3/16 Stud	99	B-28.163	Linen Washer
55		Flat Washer	100	B-35.1066-1	Sheave Pulley Ass'y.
56	B-13.258-8	Push Button (Black) (Model 602)	101	B-28.181	Idle Drive Belt
	B-13.258-2	Push Button (Brown) (Model 591)	102	B-28.163	Linen Washer
57	B-19.859	Push-Button Hinge Bracket	103		"E" Ring 3/16" Shaft
57A	B-31.337	Push-Button Return Spring	104	B-32.288	Motor Pulley
58	B-31.343	Locking Plate Spring	105	57-3589-1	#8-32 x 1/4" Bristol Hd. Set Screw
59	B-19.870	Locking Plate for Push Button	106	B-35.1064-1	Idle Slide Plate Ass'y.
60	B-33.529-2	Midget Jack Closed Circuit 3/8" lg. Bushing (Ext. Speaker)	107	B-32.264	Idle Slide Bushing
60A	B-33.528-2	Midget Jack Open Circuit 3/8" lg. Bushing (Input)	108		Flat Washer, Steel
61	B-19.867-1	Push-Button Lever	109	B-19.1431-1	Idle Throw-out Lever
62	48-2219-1	#6-32 x 5/16 Keys Hex Nut	110	B-32.291-1	Shoulder Washer
63	B-19.858	Push-Button Retaining Brkt.	111	B-31-327	Idle Lift Compression Spring
64	57-1C-603-2	#6-32 x 3/16 Phillips B.H.M.S.	112	B-35.1044-1	Sub-Idle Plate Ass'y.
65	73-2231-4	#6 Int. Lockwasher	113	B-32.275-1	#8-32 Hex Hd. Shoulder Screw
66		Phillips Head Screw	114	B-28.163	Linen Washer
67		Washer	115	B-33.405	Sub-Idle Wheel
68		Washer	116	73-2254-6	Felt Washer
69	B-35.775-1	Interlock Lever and Handle Ass'y.	117		"E" Ring 3/16" Shaft
70	B-31.338	Interlock Lever and Handle Ass'y. Return Spring	118	B-33.407-1	"C" Washer
71	B-35.774-1	Record Interlock Ass'y.	119	57-1C-603-2	#6-32 x 5/16" Phillips B.H.M.S.
72	73-2241-154	Lockwasher 5/16 O.D. x .144	120	73-2231-4	#6 Int. Lockwasher
73	57-3445-1	#8-32 x 3/8 R.H.M.S.	121	B-19.961	Detent Spring
74	B-31.338	Brake Return Spring	122	C-35.816-1	Speed Control Shaft Ass'y.
75	48-2221	#10-32 Hex Nut (Elastic)	123	C-35.823-1	Brake Drum and Bushing Ass'y.
			124	57-3589-1	#8-32 x 1/4" Bristol Hd. Set Screw
			125	B-19.976-1	Drive Mounting Plate Brkt.
			126	73-2231-5	#8 Int. Lockwasher
			127	57-6C-805-1	#8-32 x 5/16" Phillips R.H.M.S.
			128	B-31.324	Idle Tension Spring (2)
			129	57-6C-805-1	#6-32 x 5/16" Phillips B.H.M.S.

RECORDIO MODELS
591, 602

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MECHANICAL PARTS LIST (CON'T.)

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
130	B-28.194	Lord Shockmount (3)	139	57-6C-805-1	#8-32 x 5/16" Phillips R.H.M.S.
131	C-13.257-1	Flywheel	140	D-35.1054-2	Drive Mounting Plate Ass'y.
132	57-3589-1	#8-32 x 1/4" Bristol Hd. Set Screw	141	B-33.411	Flat Washer 3/4" O.D. x 3/16" I.D. x .050 (3)
133	C-35.823-1	Brake Drum and Bushing Ass'y.	142	48-2221	#10-32 Hex Nut (Elastic Stop Nut)
134	57-3589-1	#8-32 x 1/4" Bristol Hd. Set Screw	143	D-36.153	Motor, Round Type, Fasco
135	B-33.408	Idler Wheel, 2 1/2" Dia.		D-36.241	Motor, Universal
136	73-2231-5	#8 Int. Lockwasher	144	B-19.887-1	Fan Blade (Fasco)
137	57-6C-805-1	#8-32 x 5/16" Phillips R.H.M.S.		C-19.1553	Fan Blade (Universal)
138	B-19.862	Angle Bracket for Mounting Drive Ass'y.	145	B-19.878-1	Speed Shift Lever
			146		Counter Belt



AMP CHASSIS—TOP VIEW

AMP PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

TUBES

CBS			GENERAL ELECTRIC			RAYTHEON			SYLVANIA		
ITEM No.	USE		TYPE			ITEM No.	USE		TYPE		
V1	Bias Osc. -Preamp.		12AX7/ ECC83			V3	Output Rectifier		6AQ5/ EL90		
V2	AF Amplifier		6AV6/ EBC91			V4			6X4/ EZ90		

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RECORDER PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	30	250	B5. 437	AFH3-89	C0670	FP331	TMT-74	TVL-3513	
B	30	250							
C	30	25							
C2A	10	200	B5. 444	PRS2300	BBRD8025	TCD52	TDLT-26	TVA-2722	
B	10	200							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENC0 PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C4	470 10%		1469-00047	DD-471	5R5T47	CM-20B-471K	MCJ244	MS-347
C5	820 10%		1469-00082	DD-820	1R5T82	CM-20B-821K	MCB251	MS-382
C6	10000 10%		DI-10000		PM6S1	CCD-103	GEM-1611	10TS-S10
C7	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C8	10000 10%		DI-10000		PM6S1	CCD-103	GEM-1611	10TS-S10
C9	10000 10%		DI-10000		PM6S1	CCD-103	GEM-1611	10TS-S10
C10	470 10%		DI-470		5R5T47	CCD-471	GP347	10TS-T47
C11	1500 10%			DD-471	PM6D15	CCD-152	GP215	10TS-D15
C12	100		BPD-0001	DD-152	DD-101	CCD-101	UC-531	5GA-T10
C13	3000		SI 3000	DD-302	BYA10D3	CCD-302	UC-523	5HK-D30
C14	100		SI 100	DD-101	L10T1	CCD-101	UC-531	5GA-T10
C15	10000 10%		DI-10000		PM6S1	CCD-103	GEM-1611	10TS-S10
C16	220		DI-220	DD-220	L10T22	CCD-221	B-322	5GA-T22
C17	.0047 600V		P688N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C18	3-35	#B-4.144				403		
C19	10000 10%		DI-10000		PM6S1	CCD-103	GEM-1611	10TS-S10
C20	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C21	330 10%	(220mmf) *	1469-00033	DD-331	5R5T33	CM-20B-331K	MCB241	MS-333
C22	5-70	#B-4.146				462		

Recordio Part Number.
* Alternate Value.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RECORDIO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
RLA	1meg	½	C-8. 227-2	BT-74	A47F5-1meg	Q19-137X	UT-443	Volume
B	500K Tap							
C	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R2A	Switch		C-8. 231-1①	KR-1	SWE-12	76-1	US-26	Power Off-On
B	250K			B-51	A47-250K-S	Q13-130	U44	Tone
	Shaft			Not Req.	FS-3	Not Req.	Not Req.	

① Alternate Part #C-5. 249.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS
R3	1.5meg		R11	100K		R19	3.3Ω 1W	(330K) *
R4	330K		R12	6.8meg		R20	270K 1W	
R5	8200Ω 1W		R13	180K		R21	270K	
R6	680K		R14	47K		R22	120K	
R7	4.7meg		R15	470K		R23	470Ω 2W	
R8	150K		R16	1.5meg		R24	22K	
R9	68K		R17	330Ω 1W		R25	4700Ω	
R10	470K		R18	22K 1W				

* Alternate Value.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		RECORDIO PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Bias Osc.	B-1. 557						

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	RECORDIO PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V @ .30A	440 VCT @ .040A	6.3V @ 1.7A	C-9. 281						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	RECORDIO PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	
T2	5200Ω	3-4Ω	C-9. 264	26S49	A-3019	AU-606	A-8092	26S49	S-5X

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	RECORDIO PART No.	QUAM PART No.	
SP1	4"x 6"	PM	8-10Ω	C-30. 354-2	46A1Z8.6	
SP2	4"	PM	6-8Ω	C-30. 353-2	4A1Z6.5	

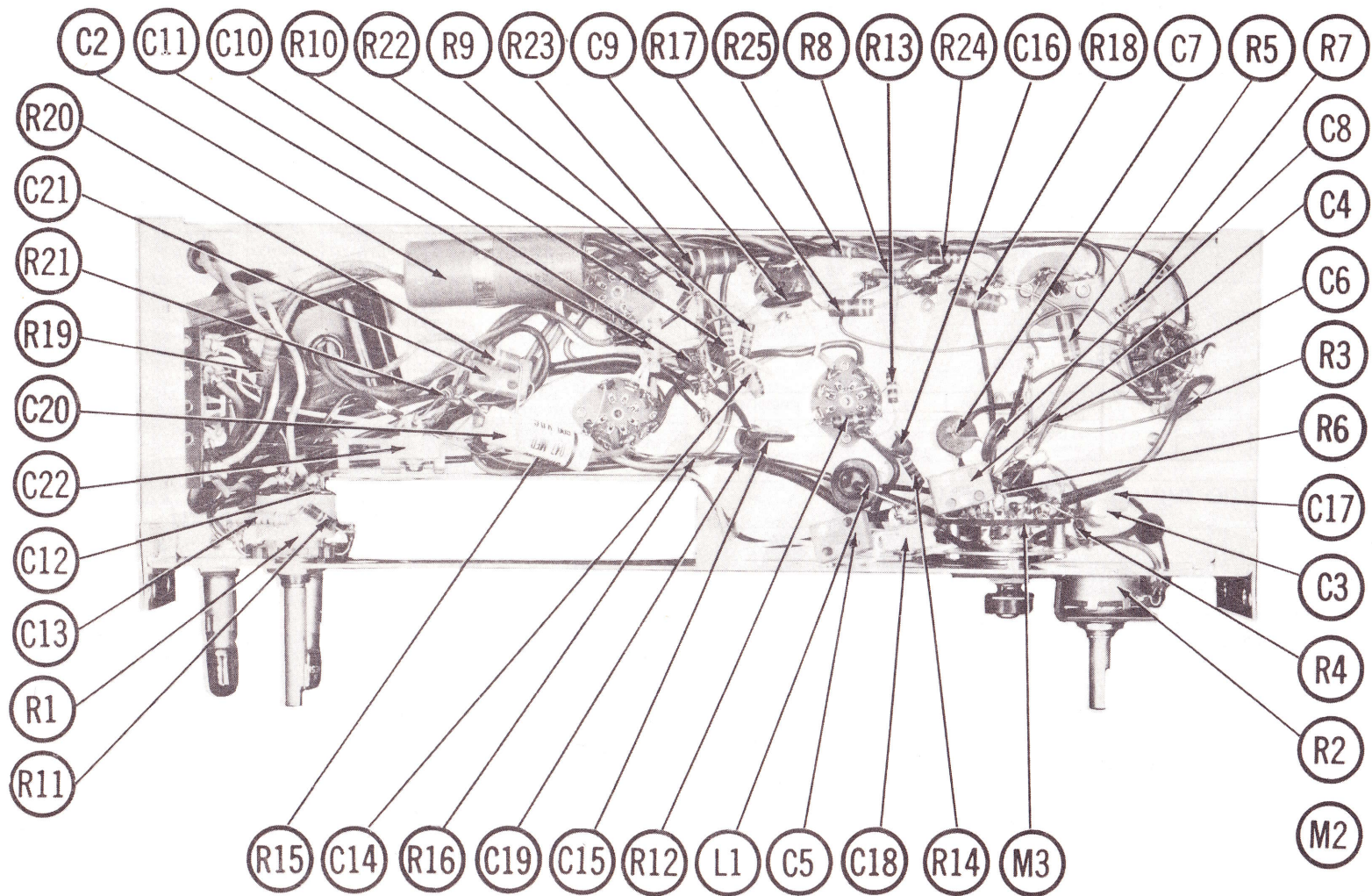
MISCELLANEOUS

ITEM No.	PART NAME	RECORDIO PART No.	NOTES
M1	Erase Head	①C-35. 756-1	Assembly (Permanent Magnet Type)
M2	Record-Playback Head	② B-36. 249	
M3	Switch	B-11. 247	Function Speaker (SPDT Slide Type) Includes Motor (M5 Part #D-36. 153) Drive Motor Crystal
	Switch	④ B-11. 287	
M4	Motor Assembly	35. 1053	
	Motor	③ D36. 153	
	Microphone	36. 195	

- ① Some versions may use alternate Part #B-35. 1048-1 in this application.
② Some versions may use alternate Part #B-36. 251 in this application.
③ Some versions may use alternate Part #D-36. 241 in this application.
④ Not used in all versions.

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)



AMP CHASSIS — BOTTOM VIEW

RECORDIO MODELS 591, 602 AMP SCHEMATIC

RECORDIO MODELS
591, 602

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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